White Plains Sept 23/49

Dear Sir

I received your favor of Sept 3d in due time. In respect to the estivation of the corolla I have made constant and careful observations. Since I wrote to you last I have not been able to find a single flowerbud of either Leucothoe racemifolia or Pieris nitida with the otherwise than the lower lip of the corolla external, excepting one of L. racemifolia and that thus (⊃). As far as decided specimens of L. flava (out of flower long before L. Pieris nitida) will permit examination the estivation is like the foregoing. In comparing the estivation of Impatiens fulva and the unspotted Imp. with the diagram and description in Lindley's Nat. Sys. Bot. I find it to be almost constantly the reverse. I have from time to time examined a great many; to day out of 53 buds I found but 4 thus (⊃), 4 (⊂) of the corolla lobes, 2 also thus (⊃) the smaller lobe partly within and partly without. With the observation that I find many of the lateral sepals of Imp. fulva inclined to be spurred. I send you three flowers having one of the lateral sepals spurred on the back. Perhaps this may go a little way to show their affinity to the large spur. I have gathered and put in press several full branches of Impatiens ——. The whole plant is so large for my press papers that it would be difficult to press the whole

I could do so if you wish a still fuller one
I have gathered seeds also It is difficult to get
them fully changed in colour although I suppose
if the pods burst upon the least touch and the seeds
are somewhat brown it will do The Acalypha
is very common here, I had thought that the spike
of the one I sent you was undeveloped, but I find it
constantly short, your dry New Jersey and Southward
I wonder it has not been noticed here before
Upon more recent attention to the hystinachis
whilst growing in the woods its habit shows its
affinity to L stricta and not it strongly reminds
one of L quadrifolia by its long-leafy base of
the racemes &c
I have pursued my examination
of the pollen of Spiranthes which resulted beautifully
I give you the notes as set down in my appendix
"The pollen masses of Spiranthes gracilis are composed
of obovate cleft laminae fig 1 A B C one of the masses
D E the left, and the two sides B and C one placed face to
face with the outer edge (as the mass, attached to the stigma
is situated) overlapping the inner; each of these cleft
divisions B, C, is composed of two laminae, not open except
the cleft but opening from the outer edge inwardly, between
which the pollen grains are attached very loosely"
Pollen masses of Spiranthes cernua shaped fig 2 more slenda
oblanceolate cordate; the divisions B and C almost
evenly oblanceolate fig 3 differing from gracilis
which is fig 4 plano convex
I find that the older the flower or
bud is, the less apt are its pollen masses to be separated by
so as to show the laminae, being rolled more close together
than when young, also the divisions each side of the
cleft are with difficulty separated into laminae
but the younger the flower the more easily is the lamin-
ation made visible, so that in the smallest buds
the mass in each lobe of the anther appears composed of
four laminae accumulent on the stigma, I certainly
must accept of your kind offer to have me a
Chevalier fitted out, I suppose it could be done
within the four days that I may shew with you
Spiranthes cernua I find is quite hoary and
somewhat roughlike on the upper leaf might not
the shape of the pollen masses be sure to distinguish species, for instance
S latifolia from aestivalis Is Ambrosia strictly monoecious, I
have found plants entirely covered with seeds and also
others with fertile and sterile flowers in the same volume
I could not be deceived in them, for the fertile had gone
to seed whilst the sterile were yet in flower I see that the
staminate flowers have what appear to me at first like a radiate capitate stigma
which I find is expert sometimes before and sometimes
after the anthers This plant puzzled me indeed, I certainly
thought its flowers were perfect, I have what I suppose is
Potamogeton natans (var fluitans) according to your manual at least; but
comparing with Mr Tuckerman's observations I find it differs much
from Mr Jurkenon in Sill' Journal May 1849 makes it a distinct species
I differ thus, "floating leaves attenuated into the plane convex (cross
section, deeply convex) footstalks, with sometimes two lateral
obsolete prominent nerves, on petioles two and even three times longer
than the leaves (2 or more long) Stipules strongly two ribbed at the base", I find the petioles

(which he quotes simply "nutlets compressed acutely carinate") obscurely laterally keeled, except removed as in P natans, I shall make more extensive and strict examination soon. I have Rudbeckia hirta which you have located Western N York &c I found it in June (which agrees with Etons manual) in a meadow like spot: but not wet; I have not seen it elsewhere, I have examined the glands of Elodea Virginica and found them differing from descrip in Generae Florae &c being shaped thus  "Corrections, Synopsis of Carpontae, for fives read fine page 186, line 16 from top — Page 476 line 8th from top for 5' read 5" — Potamogeton oblongus, for 1' read 1" — I shall be in N York on Sep. 28th, and shall soon proceed to my Uncle's in Mansfield just below you, where I intend staying a short time, from thence you may expect me, I suppose in the last part of the second week of October I suppose I will have to go to Boston before getting to you, What kind of a conveyance is there to Cambridge and where shall I find it

Very truly Yours

Henry James Clark

H J Clark

to

Asa Gray M.D.

[illegible]